DOE - Fossil Energy Techline - Issued on: October 4, 2006

DOE, Industry Consortium Project Deploys New Stripper Well Tool

Novel Technology Boosts Oil and Gas Production and Efficiency at 200 Sites Nationwide

Washington, DC - A novel technology developed through a joint government and industry venture has demonstrated significant cost and production benefits for lower-producing wells, called "stripper wells," while contributing to the security of the nation's oil and gas supplies.

The technology, named the VortexFlowTM SX tool, was sponsored by the Stripper Well Consortium, a national industry-driven group focused on developing low-cost technologies applicable to both oil and gas stripper wells. The U.S. Department of Energy (DOE) co-funds the consortium through its National Energy Technology Laboratory (NETL) in an agreement with The Pennsylvania State University.

MORE INFO

- Stripper Well Consortium website

Stripper wells produce oil and gas at the low rates of less than 10 barrels per day of oil or 60,000 cubic feet per day of natural gas. Tapping into additional oil and gas supplies within the nation's stripper wells can be an important contributor to U.S. energy security.

Some 80 percent of U.S. oil wells are now classified as marginal wells. Because these wells produce 860,000 barrels of oil per day (nearly 20 percent of U.S. production) and the nation's natural gas stripper wells produce 1.5 trillion cubic feet of gas per year (about 8 percent of U.S. production), any increase in their production rates or decrease in related costs serves as a boon to the nation's supply of energy.

Vortex Flow LLC developed the new SX tool and, to date, has deployed it in more than 200 stripper well operations across the country, increasing production and decreasing maintenance costs.

Some "real-life" successes of the Vortex technology include the following:

- A Pennsylvania well operator installed the tool on numerous gas wells and lowered line pressures to increase gas production by 30 percent.
- An operator in New Mexico installed Vortex tools ranging from 4 inches to 12 inches in a well system and similarly lowered line pressures and increased production.
- A Colorado pipeline operator installed a 10-inch SX tool and observed drops in pipeline pressures, increases in production, and the cost-saving elimination of a process called "line pigging."
- The installation of an SX tool in a 3,000-foot-deep coalbed gas well resulted in lowering the bottom hole pressure by 15 percent and increasing gas production by 10 percent.
- The installation of the SX tool in a 600-foot-deep Powder River coalbed gas well allowed the well to continue to flow uninterrupted for 10 months, thereby saving about $12,000 in annual costs.

What is so inherently special about the Vortex tool that facilitates enhanced production and greater cost effectiveness in stripper wells?

Vortex Flow based its SX tool -- tubelike devices with spool connectors inserted into a well -- on breakthroughs in fluid dynamics that provide a way for an operator to address the turbulence and disorganization of liquids and gases when they flow through a pipe. The SX tool converts the turbulent, disorganized flow into an organized "vortex" flow that accelerates the velocity of water used in the process and reduces the friction that causes the pressure to drop as fluids move through a pipe. By doing so at both surface and subsurface levels, the SX tool helps to reduce wear and tear on oil and gas pipelines while increasing production and reducing costs. At current gas prices, the SX tool has been shown to pay for itself within 60 days. Vortex Flow perfected its tool during testing at DOE's Rocky Mountain Oilfield Testing Center in Casper, Wyoming.

NETL researchers have been actively identifying wells that prematurely decline to stripper well status and have been developing technologies that result in increased production, longer well life, and more efficient and cost-effective recovery of remaining oil and gas in those wells.

Since the majority of stripper well owners are small, independent operators, NETL organized the Stripper Well Consortium to leverage the resources of those operators to develop applicable technologies.

- End of Techline -

For more information, contact:

- Mike Jacobs, FE Office of Communications, 202-586-0507